

The San Juan County Marine Stewardship Area: Developing a Marine Management Regime that Recognizes the Social, Cultural, Economic and Ecological Values of County Waters

Jody Kennedy¹ and Mary Masters²

Keywords: marine, protected, stewardship, management, community, science

Abstract

In early 2004, the Board of County Commissioners designated San Juan County a Voluntary Marine Stewardship Area. Under this designation, the local Marine Resources Committee (MRC) is responsible for identifying special management areas that allow sustainable use of marine resources while protecting and restoring sensitive marine species and habitats. Although the County has limited regulatory authority over its marine resources, the commissioners are committed to implementing management policies that increase public awareness and provide guidelines for responsible use of marine resources. Special management areas will be defined through the development of a zoning scheme, which will include multiple-use, special, and restricted areas throughout County waters. The development of this zoning scheme requires consideration of scientific information on species, habitats, and the processes that sustain them as well as the human values and economic benefits that are tied to the marine environment. The MRC is incorporating these factors into the zoning scheme by compiling and analyzing the best available science concerning local marine ecosystems and by collecting cultural, human use and relevant anecdotal information from residents, visitors, tribes and stakeholder groups. Through community meetings, the MRC hopes to bring science and communities together in a collaborative process to develop management strategies for the Marine Stewardship Area.

Keywords: San Juan County, Marine Stewardship Area, marine protected areas, marine management policy, sensitive areas, zoning

Introduction

Located within the Northwest Straits at the convergence of Puget Sound and Georgia Basin, San Juan County provides habitat critical to several species of living organisms found within the marine ecosystem of the region. The archipelago has over 400 miles of shoreline providing a wide range of habitat types, including rocky reefs, sand and gravel beaches, kelp forests, pocket estuaries, and eelgrass beds. Marine mammals, marine birds, salmon, bottomfish, forage fish, algae and various invertebrates such as urchins and sea cucumbers can all be found in the San Juans throughout the year. The southern resident orca population inhabits the San Juans several months annually.

As reported by the Puget Sound Action Team in *The State of the Sound 2004*, Puget Sound's marine ecosystem is threatened by population growth, pollution, fishing and boat traffic.³ All of these threats are prevalent in San Juan County where many marine species are designated species of concern by the State, or threatened or endangered by the Federal government. Several of these species, including rockfish, Hood Canal summer chum, western grebes, and surf scoters are still in decline despite existing conservation efforts.

San Juan County is one of the fastest growing counties in the state.⁴ In addition, because the San Juans are a beautiful marine environment, rich with marine life, they are also a popular destination for summer boat traffic, recreational fishing and wildlife viewers. The Port of Friday Harbor is one of the busiest marinas on the West Coast and one of the busiest customs ports in the United States. Increasing marine activity and population growth, including especially the rapid development of county shorelines, is causing adverse impacts to nearshore and marine environments.

¹ Jody Kennedy is the Coordinator for the San Juan County Marine Resources Committee, PO Box 947, Friday Harbor WA 98250, U.S.A., Phone: 360-378-1095, E-mail: jody@sjcmrc.org

² Mary Masters is Vice-Chair of the San Juan Marine Resources Committee, E-mail: mmasters@stanfordalumni.org

³ Puget Sound Action Team. 2005. State of the Sound 2004. Report available at: http://www.psat.wa.gov/Publications/StateSound2004/State_Sound_base.htm

⁴ US Census. 2000.

In response to growing pressure from human impacts, the San Juan Marine Resources Committee (MRC) developed a vision and goals statement to guide a process for reversing the declines in local marine species and promoting sustainable use of living marine resources.⁵ This statement outlines the committee's vision for a healthy marine environment, the guiding principles and goals to support that vision and an action plan for achieving these goals. This plan calls for the following steps:

1. Communicate the vision/goals statement to develop public support and consensus, revising the vision/goals based on public input as appropriate;
2. Assemble information on what is currently known about the status of marine resources and the marine ecosystem in San Juan County;
3. Develop a proposal for a system of marine protected areas in San Juan County and implement the initial protected areas through outreach and education, incorporating adaptive management principles.

Shortly after this plan was adopted in the spring of 2003, the MRC developed the concept for the San Juan County Marine Stewardship Area (MSA). The objective of the MSA is to protect the unique and valuable marine resources of the islands while allowing sustainable use of these resources to continue.

To date, implementing the San Juan County MSA has included two phases. In the first phase, the MRC proposed that the entire county be declared a marine stewardship area based on rules, regulations, and voluntary protections already in place. The purpose of this proposal was to increase public awareness regarding the existence of critical marine species and habitats in San Juan County, protections already in place for those resources, and the need to steward them. For the second phase, the MRC proposed and is currently seeking public input to consider the designation of specific areas within the MSA where additional voluntary or regulatory measures could be established to protect and/or restore marine resources.

MSA Phase One: Existing Protected Areas

In January 2004, the San Juan County Board of County Commissioners (BOCC) declared San Juan County a Marine Stewardship Area that includes all areas set aside at that time to protect the marine ecosystem. These areas consist of the following designations, which are shown in Figure 1.

Marine Biological Preserve (Entire County). Regulation: only food and kelp can be removed from county waters unless warranted by the Director of the Friday Harbor Labs. This applies to all salt water, tidelands, and shorelines.

UW Marine Reserves (5 sites). Regulation: established by the University of Washington and adopted by the WDFW and several treaty tribes, these areas are closed to all shellfish and bottomfish harvest, except for crabbing in Parks Bay.

National Wildlife Refuges (83 sites). Regulation: all refuges are closed to the public except for Matia and Turn Islands. Guideline: all boaters are advised to stay 200 yards away to avoid disturbing marine mammals and birds.

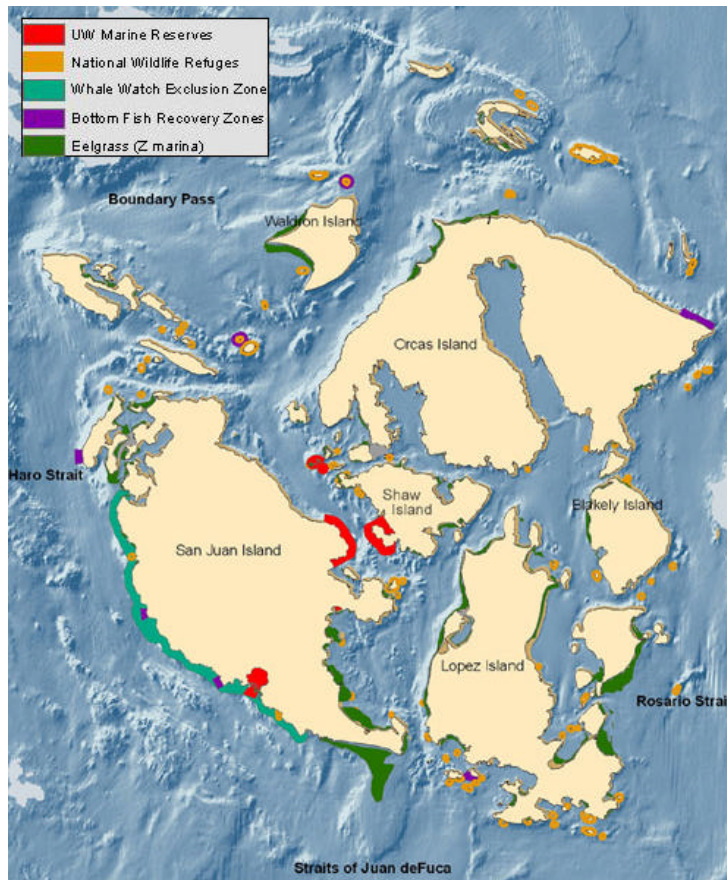
Bottomfish Recovery Zones (8 sites). Guideline: adopted by San Juan County, these areas are closed to bottom fishing within one-quarter mile of shore.

Whale Watch Exclusion Zone. Guideline: boaters are advised to stay one-quarter mile off shore (half mile in the Lime Kiln area) when whales are present. Boaters should also stay on the offshore side of whales at all times. Regulation: do not disturb any marine mammals anywhere.

Eelgrass Beds. Regulation: state policy is "no net loss" for the protection of documented forage fish spawning sites. Critical spawning habitat for forage fish, including eelgrass beds, exists along much of San Juan County's shoreline.

⁵ San Juan County Marine Resources Committee. 2003. Vision, Goals, and Objectives for Marine Ecosystem Protection and Restoration in San Juan County. Adopted Nov 7, 2001; revised April 4th, 2003.

FIGURE 1. San Juan County Marine Stewardship Area, with Voluntary and Regulatory Areas as of 2004⁶



The MSA encompasses existing policies under one concept that over time and with extensive outreach will encourage marine users to be aware of and respect existing guidelines and regulations defined by federal and state agencies as well as local jurisdictions.

MSA Phase Two: Data Assembly, Public Outreach, and Development of Protection/Restoration Zones

In Phase 2 of the MSA process, the BOCC called on the MRC to undertake a formal study of the County's biologically rich marine areas and recommend to the Board measures necessary to protect and restore these areas.

The MRC is approaching these tasks on three fronts: 1) Collection of all available relevant data on marine resources in San Juan County; 2) Collection of public input, which the MRC believes is critical to the successful development and implementation of new voluntary policies; 3) Consultation with a science advisory group regarding issues associated with implementing marine protection and restoration measures, such as data quality, effective application of data, applications of zoning methodology, sizing and locations of protected areas, and other science-based issues relevant to marine stewardship.

Early in the process, the MRC decided to use spatial analysis with GIS to highlight special management areas on a map. In addition, the MRC adopted a marine zoning approach for designating critical habitat areas that might

⁶ All maps in this report were created by Jim Slocumb.

warrant special management policies. These could include voluntary restrictions on certain uses, such as no-anchoring in known eelgrass beds and no-wake zones in areas of known forage fish spawning beaches.

The zone approach is based on the Great Barrier Reef Marine Park, where a zone-based planning scheme attempts to promote sustainable use of the marine resources while protecting them for future generations.⁷ Each zone is accompanied by a management strategy. The more critical the area is for marine wildlife, the more restrictive the management policies are.

Following this model, the MRC identified four general management zones for county waters. Each zone is assigned a color used to delineate each management area on the map.

1. **General Use Zone (blue):** This zone will contain all marine waters of the county not included in one of the other zones. Users should follow all applicable Federal, State, Tribal, and County regulations regarding fishing, dumping, boat speed, anchoring, personal watercraft, and other activities in this area.
2. **Recreational Zone (green):** This zone will include water and shoreline areas of all National, State, and County parks and other areas that are highly used by recreational enthusiasts and therefore require a higher stewardship ethic. Some restrictions on use, such as a maximum daily visitor limit, will be necessary due to potentially high impact from many users.
3. **Special Use Zone (yellow):** This zone will contain restricted and sensitive areas where human use impacts need to be substantially curtailed in order to preserve sensitive areas, prevent further degradation and to begin the process of recovery. Types of special use zones include;
 - a. Sensitive adjacent upland areas (forage fish beaches, National Wildlife Refuges)
 - b. Sensitive bottom land (eelgrass)
 - c. Sensitive water quality areas (low flush areas)
 - d. Sensitive wildlife areas
4. **Preservation Zone (red):** Provides for the preservation of designated marine areas by restricting the human uses permitted in these areas. Sites to be initially included in the preservation zone are existing Bottom Fish Recovery Zones and the University of Washington Marine Reserves. This zone may also contain additional areas identified as sensitive and vulnerable and areas of sensitivity that are substantially degraded and are possible to restore.

The MRC is actively working to determine if these zone descriptions are adequate to achieve conservation objectives and to identify the zone boundaries. Currently, the MRC has compiled an extensive amount of marine resources data, performed a spatial analysis of the existing datasets using GIS and given more than a dozen public outreach presentations.

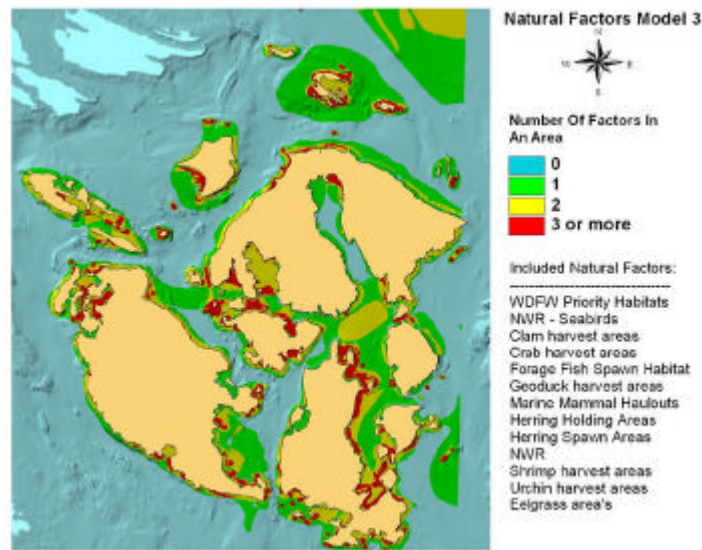
Data Collection and Analysis

San Juan County is unique in that local awareness of the value of the environment is both significantly high and well documented. This situation provides the requisite opportunity to utilize substantial amounts of available data to propose a system of protection within the County. Much of the marine resources data available for San Juan County has been compiled into a geodatabase that is being analyzed by the MRC to identify marine areas in the County that are rich with marine life and biodiversity.

In Figure 2, marine habitat data have been used to indicate areas of potential concern to marine resource managers. The map shows areas where multiple species' habitats, listed under "Natural Factors" on the figure, co-exist in San Juan County. Such areas of biodiversity are likely to be of special interest for preservation or restoration activities. This analysis demonstrated to the MRC that, according to this data, much of the most diverse marine habitat in San Juan County is close to the shoreline.

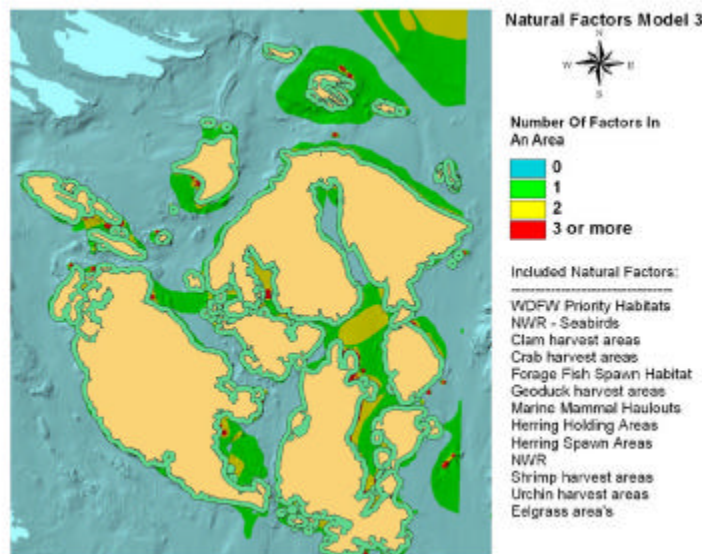
⁷ Laffoley, D. 1995. Techniques for managing marine protected areas: zoning. Pages 103-118 in S. Gubbay, editor. Marine protected areas: principles and techniques for management. Chapman & Hall, London.

FIGURE 2. Areas of Co-existing Marine Species' Habitats⁸



As a next step, the MRC used the results shown in Figure 2 and developed a model placing a one-quarter mile buffer, originating at the high water mark, around the entire shoreline of the County (Figure 3.) The buffer zone is simple and highlights most of the marine areas in the County where three or more of the listed factors have been documented. This straightforward model is one approach to looking at marine resources in San Juan County.

FIGURE 3. Co-existing Marine Species' Habitats with a one-quarter mile buffer

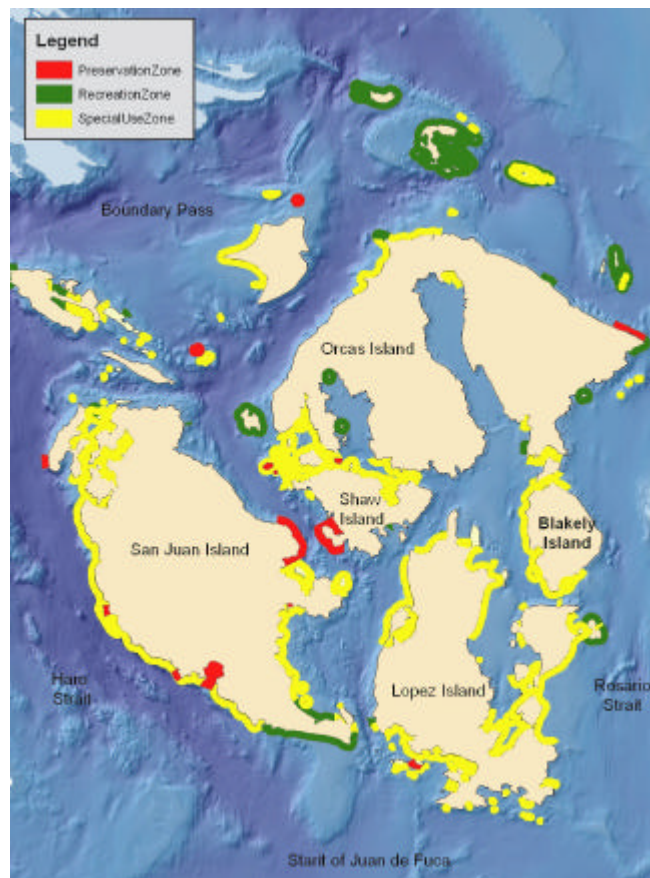


The MRC then incorporated the four management zones, as described above, into the analysis in order to develop a first draft proposal for MSA Management Zones, shown in Figure 4. This proposal places a one-quarter mile buffer adjacent to all parks to create the Recreational Zone and around certain critical habitat factors to create the Special Use Zone. The Preservation Zone contains existing marine reserves. Between the Special Use Zone and the

⁸ Data for Figures 2&3 are from WDFW, USFWS, Friends of the San Juans and WADNR. For more information, visit: www.sjcmrc.org.

Preservation Zone, most of the marine areas in the County that were identified as rich with marine life habitat and as biologically diverse are protected in some way, including forage fish spawning beaches and eelgrass beds. County waters outside these three zones form the General Use Zone and are subject to countywide regulations and guidelines, such as State fishing regulations.

FIGURE 4: Draft MSA Management Zones Proposal



Public Outreach

In order to collect public input and build support for existing regulations and guidelines, as well as potentially new protection measures, the MRC brought citizens into the MSA campaign at its beginning. This process involved educating community members about the stewardship area project and collecting community feedback and anecdotal data on the local marine resources. There is wealth of local knowledge about the County's marine environment, including critical habitats, historic harvesting grounds, and other culturally significant areas in the marine waters and along the shorelines.

To launch the outreach campaign for the Marine Stewardship Area, the MRC produced several outreach tools for educating residents and visitors about existing marine protected areas and reserves within the County. These materials included details about the rules and guidelines that accompany these areas. Publications included the MSA map, a detailed map book of the entire County, a brochure, an MSA map on the back page of WDFW fishing rules guidebook, three advertisements in all of San Juan County's major newspapers, and several new pages on the MRC's website. In addition, the committee designed and produced over 1000 laminated maps of existing protected areas in the County, placed them on charter yachts in Anacortes and Friday Harbor, in local sporting goods stores, and distributed them to boaters across the County.

Next, the MRC completed multiple outreach events to educate the local community about the stewardship area. These include presentations to the local Lions Clubs, the Chamber of Commerce, the Power Squadron, and the Whale Museum's naturalist trainees. In addition, MRC members visited several communities throughout the County to initiate the development of local pilot stewardship groups in order to promote the values of the MSA. Finally, formal community meetings were held on Waldron and Orcas Islands, presenting the MSA and the draft proposal for the development of special use, preservation and recreation marine management zones.

In order to collect local knowledge about marine resources, the MRC presented participants in the outreach events with two blank maps, one of the entire County and one enlargement of the specific area in which they lived. Participants were encouraged to highlight areas that they felt were significant, either for recreational enjoyment, cultural or social values, or for marine life. While this approach has been successful at collecting spatially oriented anecdotal data, the MRC has found that it is difficult to elicit participation by County residents in this process. This could be because of the format of the outreach events or because people chose not to be forthcoming with this type of information. In response to the low participation rates (<30), the MRC has initiated a program for collecting this information from long time residents of the County through more personal contact involving interviews and working groups.

Policy Development

Before presenting a final MSA Management Zone Scheme and associated policy recommendations to the BOCC, the MRC will address several questions. These include, but are not limited to:

1. Should new areas be added to the preservation zone in order to achieve the goals of the stewardship area?
2. How should zone boundaries be determined when the zones, such as recreational and special use, overlap?
3. Should corridors outside the designated zones be incorporated into the zone scheme to protect species that move throughout county waters?

In order to answer these and many other questions, the MRC will continue to hold public outreach events and collect scientific information as it becomes available. In addition, the committee will pull together a group of scientists to review the zone proposal within the context of the MRC's marine resource sustainability objectives. The committee hopes to have a final proposal to the BOCC by January, 2006. Then the Board will decide to adopt the proposal or encourage further development. Once a proposal is adopted, the MRC will focus its efforts on educating residents and visitors about the new resource management policies. In addition, the committee will implement an adaptive management strategy, which will involve monitoring and measuring success, continuing to solicit public input, and adjusting the zones based on additional data collected from monitoring, measuring and feedback.

The development of effective management measures for San Juan County will require coordination between managers across diverse resource sectors. Last fall, the MRC participated in a Northwest Straits Commission Marine Managers Work Session that brought land and marine managers with jurisdictions in the County together for a two-day workshop. Participants, including Federal and State agencies, Tribes, local government, local organizations and land managers, discussed the goals of the MSA and opportunities for coordinating efforts to manage marine resources. The MRC will continue to communicate with these managers to identify and encourage cooperative efforts that promote the stewardship of local marine resources.

Conclusion

The San Juan County Marine Stewardship Area is breaking new ground in community-based management of marine resources. Without creating new regulations, the Marine Stewardship Area designation provides a valuable tool for educating marine users about the sensitive waters in San Juan County. During Phase Two, the process for developing a zone scheme is engaging the local community in developing additional stewardship strategies to protect and restore marine species and habitats for current and future generations. As the MRC continues to work on Phase Two, we look forward to finalizing a marine resources management proposal for San Juan County in 2006, followed by the implementation of an adaptive management strategy to help ensure success for the County and its marine ecosystem.